Science

CONTENTS

Effect of Narrow Carbon-Nitrogen Ratio and of Naturally Occurring Tannins in Decomposing Plant Materials upon the Production of Mucus. J. G. SHRIKHANDE... 1
The Influence of Amino Acids and Proteins on Nitrogen Fixation by *Azotobacter chroococcum*. J. E. GREAVES, LOUIS JONES, AND ALICE ANDERSON..... 9
Survival of Azotobacter in Soil. H. KATZNELSON..... 21
Effect of Waste Sulfite Liquor on Soil Properties and Plant Growth. J. B. SPULNIK, R. E. STEPHENSON, W. E. CALDWELL, AND W. B. BOLLEN..... 37
A Simple Apparatus and Procedure for the Determination of the Carbon Content of the Soil. BERT E. CHRISTENSEN, GLENN SIMKINS, AND VIRGIL HIATT..... 51
A Rapid Method of Checking the Accuracy of Reported Water Analyses. V. P. SOKOLOFF..... 57
A Soil Zinc Survey in California. P. L. HIBBARD..... 63
Consistency and Physicochemical Data of a Loess Pampaneo Soil: I. Physicochemical Properties of Samples from Different Depths of a Profile. HANS F. WINTERKORN AND GEORGE W. ECKERT..... 73
Autolysis of a Thermophilic Actinomyces. H. KATZNELSON..... 83
Chemical Effects of Saline Irrigation Water on Soils. W. P. KELLEY, S. M. BROWN, AND G. F. LIEBIG, JR..... 95
The Laws of Soil Colloidal Behavior: XXI A. The Amphoteric Points, the pH, and the Donnan Equilibrium. SANTE MATTSON AND LAMBERT WIKLANDER..... 109
The Laws of Soil Colloidal Behavior: XXI B. The Amphoteric Points, the pH, and the Donnan Equilibrium. SANTE MATTSON AND LAMBERT WIKLANDER..... 135
Base Exchange in Soils: II. Exchange Acidity. AMAR NATH PURI AND H. L. UPPAL.. 155
The Oxidation of Manganous Compounds by Microorganisms in the Soil. G. W. LEEPER AND R. J. SWABY..... 163
The Influence of Environmental Factors upon the Development of Algae and Other Microorganisms in Soil. JACOB L. STOKES..... 171
Bacteriological Studies on a new Capsulated Bacillus, *Bacillus krzemieniewski*. J. KLECZKOWSKA, A. G. NORMAN, AND S. F. ŚNIESZKO..... 185
Experiments on the Chemical Nature and Properties of the Polysaccharide Produced by *Bacillus krzemieniewski* n. sp. A. KLECZKOWSKI AND P. WIERZCHOWSKI..... 193
Assimilation of Phosphorus by a Mixed Soil Population and by Pure Cultures of Soil Fungi. SING CHEN CHANG..... 197
Survival of Microorganisms Inoculated into Sterilized Soil. H. KATZNELSON..... 211
Nutrition Studies with Corn: III. A Statistical Interpretation of the Relation between Nutrient Ion Concentration and the Carbohydrate and Nitrogenous Content of the Tissue. J. R. BECKENBACH, W. REI ROBBINS, AND J. W. SHIVE..... 219
Physical Characteristics of Soils: VI. Influence of Clay, Exchangeable Bases, and Hygroscopic Moisture on Soil Cohesion. AMAR NATH PURI, A. G. ASGHAR, AND A. N. DUA..... 239
Alexius A. J. de'Sigmond, 1873–1939..... 251
Hydrolysis of Urea in Soils by Thermolabile Catalysis. JOHN P. CONRAD..... 253
The Role of Algae in the Nitrogen Cycle of the Soil. JACOB L. STOKES..... 265
Primary Minerals of the Silt Fraction as Contributors to the Exchangeable-Base Level of Acid Soils. E. R. GRAHAM..... 277
Survival of Microorganisms Introduced into Soil. H. KATZNELSON..... 283

Origin and Properties of Alkaline Raw Humus. H. M. Galloway 295
Availability of Fixed Potassium to Plants. L. Kolodny and W. R. Robbins 303
The Role of Potassium in Plants: II. Effect of Varying Amounts of Potassium on the Growth Status and Metabolism of Tomato Plants. Monroe E. Wall 315
Iron-Manganese Concretions in Dayton Soils. M. Drosdoff and C. C. Nikiforoff .. 333
Determination of Pore-Size Distribution in Soils. Ross W. Leamer and J. F. Lutz .. 347
Iodine Content of Some Texas Soils. D. R. Ergle 361
Physical Characteristics of Soils: VII. Effect of Ignition. Amar Nath Puri and A. G. Asghar 369
Control of Fecal-Borne Diseases in North China: XI. Chemical Nature of Shantung Farm Manure. Stanley D. Wilson, Gerald F. Winfield, Shang-Chin Ch'en and Tsung-Yi Chao 379
The Role of Potassium in Plants: III. Nitrogen and Carbohydrate Metabolism in Potassium-Deficient Plants Supplied with Either Nitrate or Ammonium Nitrogen. Monroe E. Wall 393
A Convenient Method for the Excavation of Growing Trees in Undisturbed Soil. F. A. F. Schmid and F. J. Nutman 411
Association of Legumes and Nonlegumes. M. R. Madhok 419
A Study of the Chemical Nature of Humic Acid. W. Sherman Gillam 433
The pH of Soil as Affected by Soil Moisture and Other Factors. M. R. Huberty and A. R. C. Haas 455
Consistency and Physicochemical Data of a Loess Pampaneo Soil: II. Properties of Natural and Homoionic Samples of Soils and Clays. Hans F. Winterkorn and George W. Eckert 479